

WHAT IS CLAIMED IS:

1. A mechanical bug, comprising:

a housing;

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a gear mechanism within the housing; and

at least six legs extending from the housing, each leg having a first end operationally associated with the gear mechanism such that movement of the gear mechanism also moves the leg;

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wherein at least three legs move backward in a flat plane while at least three other legs arch upward and forward before returning again in the flat plane, causing the mechanical bug to remain level and steady as the mechanical bug walks forward.

2. The mechanical bug of claim 1, including a first shuttle engaging the

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gear mechanism on a first side of the housing and a second shuttle engaging the gear mechanism on a second side of the housing, wherein each shuttle engages at least three legs.

3. The mechanical bug of claim 2, wherein the first shuttle engages the

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first end at least one leg on the second side of the housing and the first ends of at least two legs on the first side of the housing, and the second shuttle engages the first end of at least one leg on the first side of the shuttle and the first ends of at least two legs on the second side of the housing.

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4. The mechanical bug of claim 2, wherein the gear mechanism

includes at least three gears, each of the three gears including a first side, a second side, and two diametrically opposed posts on opposite sides of the gear, wherein the first shuttle engages at least two posts on the first side of the housing and the second shuttle engages at least two posts on the second side of the housing, whereby the posts move the shuttles backwards and forwards as the gears rotate.

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5. The mechanical bug of claim 4, wherein each shuttle includes a plurality of loops, each loop engaging a particular one of the posts, whereby when the gears rotate one full turn, one of the posts on each gear will travel up and down on one side within the confines of one of the loops causing the shuttle to which that particular loop is attached to move forward and backward, and the post on the other side of each gear will move down and up within the confines of another loop causing the shuttle to which that particular loop is attached to move backward and forward.

6. The mechanical bug of claim 5, wherein each leg includes a second end for contacting a surface, and wherein the first end of each leg is inserted into a particular loop of the shuttles such that movement of the shuttles also moves the legs.

7. The mechanical bug of claim 1, wherein the gear mechanism is remote controlled.

8. The mechanical bug of claim 2, wherein each leg includes a second end for contacting a surface, wherein a first end of each leg engages a particular one of the shuttles such that movement of the shuttles also moves the legs.

9. The mechanical bug of claim 1, including a plurality of brackets connected to first and second sides of the housing, wherein each leg is pivotally connected to a respective bracket, whereby each of the brackets provides a point about which the respective leg pivots when moving.

10. The mechanical bug of claim 1, including means for driving the gear mechanism.

11. The mechanical bug of claim 10, wherein the gear mechanism includes a plurality of gears, the driving means operationally engaging one of the

plurality of gears, thereby causing that particular gear to rotate at least one adjacent gear of the plurality of gears, whereby rotation of the gears causes the legs to move.

5                   12. The mechanical bug of claim 10, wherein the driving means is a motor.

                  13. The mechanical bug of claim 12, wherein the motor is battery-powered.

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                  14. The mechanical bug of claim 12, wherein the motor is solar-powered.

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                  15. The mechanical bug of claim 10, wherein the driving means is a spring-loaded wind-up mechanism.

                  16. A mechanical bug, comprising:

                  a housing;

                  a gear mechanism within the housing;

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                  at least six legs extending from the housing, each leg having a first end operationally associated with the gear mechanism such that movement of the gear mechanism also moves the leg;

                  a first shuttle engaging the gear mechanism on a first side of the housing, and a second shuttle engaging the gear mechanism on a second side of the housing, wherein each shuttle engages at least three legs; and

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                  means for driving the gear mechanism;

                  wherein at least three legs move backward in a flat plane while at least three other legs arch upward and forward in a semi-circle before returning again in the flat plane, wherein the plane is common to an axis of the semi-circle, causing the mechanical bug to remain level and steady as the mechanical bug walks forward.

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17. The mechanical bug of claim 16, wherein the first shuttle engages the first end at least one leg on the second side of the housing and the first ends of at least two legs on the first side of the housing, and the second shuttle engages the first end of at least one leg on the first side of the shuttle and the first ends of at least two legs on the second side of the housing.

18. The mechanical bug of claim 16, wherein the gear mechanism includes at least three gears, each of the three gears including a first side, a second side, and two diametrically opposed posts on opposite sides of the gear, wherein the first shuttle engages at least two posts on the first side of the housing and the second shuttle engages at least two posts on the second side of the housing, whereby the posts move the shuttles backwards and forwards as the gears rotate.

19. The mechanical bug of claim 16, wherein the gear mechanism is remote controlled.

20. The mechanical bug of claim 16, wherein each leg includes a second end for contacting a surface, wherein a first end of each leg engages a particular one of the shuttles such that movement of the shuttles also moves the legs.

21. The mechanical bug of claim 16, including a plurality of brackets connected to first and second sides of the housing, wherein each leg is pivotally connected to a respective bracket, whereby each of the brackets provides a point about which the respective leg pivots when moving.

22. The mechanical bug of claim 16, wherein the gear mechanism includes a plurality of gears, the driving means operationally engaging one of the plurality of gears, thereby causing that particular gear to rotate at least one adjacent gear of the plurality of gears, whereby rotation of the gears causes the legs to move.

23. A mechanical bug, comprising:

a housing;

a gear mechanism within the housing;

at least six legs extending from the housing, each leg having a first end  
5 operationally associated with the gear mechanism such that movement of the  
gear mechanism also moves the leg;

a first shuttle engaging the gear mechanism on a first side of the  
housing, and a second shuttle engaging the gear mechanism on a second side  
of the housing, wherein each shuttle engages at least three legs;

10 a plurality of brackets connected to first and second sides of the  
housing wherein each leg is pivotally connected to a respective bracket, whereby  
each of the brackets provides a point about which the respective leg pivots when  
moving; and

means for driving the gear mechanism;

15 whereby at least three legs move backward in a flat plane while at least  
three other legs arch upward and forward in a semi-circle before returning again  
in the flat plane, wherein the plane is common to an axis of the semi-circle,  
causing the mechanical bug to remain level and steady as the mechanical bug  
walks forward, and wherein the mechanical bug is remote controlled.

20 24. The mechanical bug of claim 23, wherein the first shuttle engages  
the first end at least one leg on the second side of the housing and the first ends  
of at least two legs on the first side of the housing, and the second shuttle  
engages the first end of at least one leg on the first side of the shuttle and the  
25 first ends of at least two legs on the second side of the housing.

25 25. The mechanical bug of claim 23, wherein the gear mechanism  
includes at least three gears, each of the three gears including a first side, a  
second side, and two diametrically opposed posts on opposite sides of the gear,  
30 wherein the first shuttle engages at least two posts on the first side of the  
housing and the second shuttle engages at least two posts on the second side

of the housing, whereby the posts move the shuttles backwards and forwards as the gears rotate.

5           26. The mechanical bug of claim 23, wherein each leg includes a second end for contacting a surface, wherein a first end of each leg engages a particular one of the shuttles such that movement of the shuttles also moves the legs.

10           27. The mechanical bug of claim 23, wherein the gear mechanism includes a plurality of gears, the driving means operationally engaging one of the plurality of gears, thereby causing that particular gear to rotate at least one adjacent gear of the plurality of gears, whereby rotation of the gears causes the legs to move.